2.0 The Fire and Hanford's Response

2.1 Initiating Event

On Tuesday, June 27, 2000, a fatal motor vehicle accident occurred at about 1:20 p.m. on SR 24 at Milepost 36, approximately two miles west of Hanford's Yakima Barricade (on the northwest corner of the site). The semitractor-trailer involved in the accident jackknifed as a result of the collision and fully blocked both the east- and westbound lanes of traffic on the two-lane road. Before the semi came to a complete stop, the fuel from its tanks ignited and started fires on both the north and south sides of SR 24.

The fires began in the area of ALE Reserve, which is managed by the FWS under permit from DOE. The vegetation in this area is representative of those on the Hanford Site—cheat grass, tumbleweeds, and sagebrush typical of an arid shrub-steppe habitat. Hot, dry weather throughout the Columbia Basin region had accelerated the fire season in the area; a Red Flag warning had been issued earlier on the day of the accident.

Red Flag Warning

The National Weather Service issues a Red Flag warning when forecast weather conditions together with existing environmental conditions could result in extreme fire behavior, or, as in the case of dry lightning, extensive fire starts within the next 24 hours.

2.2 Initial Response

Within minutes of the accident, the Hanford Fire Department (HFD) and Hanford Patrol were notified of the event by the Washington State Patrol dispatcher and by private citizens. At 1:39 p.m., personnel from the Hanford Patrol and HFD Medic Unit 92 were the first emergency responders to arrive on the scene. Travel time for the units was approximately 14 minutes.

When they arrived, the emergency responders found a semi-tractor-trailer fully engulfed in flames and two wildland fires estimated at five acres and growing rapidly. Traffic backed up on both the east and west sides of the scene was estimated at well over 50 vehicles and included some semitractor-trailers and tankers.

Fire attack — backburning

JUNE 27, 2000

1:20 p.m. Motor vehicle accident occurs on SR 24 (Milepost 36)

1:25 p.m. Hanford Fire Department (HFD) is notified

HFD dispatches standard response for vehicle fire

HFD captain requests additional firefighting equipment while en route to scene

1:39 p.m. Hanford Patrol on scene (east side)

HFD Medic Unit 92 arrives on scene

Incident Command

The Incident Command System provides the combination of facilities, equipment, personnel, procedure and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives.

Incident Commander

Individual person or organization responsible for the management of all incident operations at the incident site.

While en route to the scene, the HFD captain assigned as the lead for the initial response requested the involvement of the HFD battalion chief. He also dispatched two pumper/tankers and a water tender in addition to the standard response units (an engine, a pumper/tanker, and two ambulances). The captain requested that the Southeast Communications Center (SE-COMM) be notified. He also requested that the Washington State Patrol set roadblocks and that additional firefighting support, including heavy equipment, be provided.

The HFD captain arrived on the scene at 1:44 p.m. and established an Incident Command. The fire was estimated to have increased to approximately 10 acres on both sides of SR 24. Pushed by high winds, the fire was spreading at an estimated rate of about 6 to 8 miles per hour, with some flames approximately 30 feet high. Vehicles continued to enter and congest SR 24 on both sides of the accident, and the HFD captain requested that Hanford Patrol close the highway.

By 1:45 p.m., the HFD had cut fencelines to give oncoming pumper/tankers immediate access to the ALE Reserve. Arriving grass units and pumper/tankers were assigned to fight the fire on both the north and south sides of Highway 24. The primary objective on the north side was to protect nearby private structures and property. The units on the south side were tasked with extinguishing the flanks of the fire while working their way to the head of the fire, as well as with protecting the people and vehicles stopped on the roadway. Every available wildland resource was deployed to fight the fire as it arrived.

Accident scene aftermath—initial attack access

JUNE 27, 2000

1:40 p.m. HFD reports 5- to 10-acre fire, spreading 6- to 8-mph, requests closure of SR 24

HFD captain arrives on scene, establishes Incident Command
HFD deploys fire response to north and south of SR 24 (note: two fire fronts)

1:45 p.m. HFD cuts fenceline between SR 24 and ALE Reserve

2:00 p.m. Estimated fire size: 50 acres

Helicopter support requested from U.S. Army Yakima Training Center

2.3 Incident Command

While en route to the scene, the HFD battalion chief notified the FWS of the wildland fire and requested that FWS fire units be dispatched. The battalion chief also requested additional heavy equipment to be staged at the Hanford Yakima Barricade. The HFD battalion chief arrived on the scene and assumed command of the incident at 1:52 p.m. At this time, the U.S. Army Yakima Training Center was requested to provide helicopter fire suppression support. Also during this period, a private citizen volunteered his services and heavy equipment to create firebreaks; the HFD declined his offer because of safety concerns.

Accident scene aftermath—rough terrain

At 2:35 p.m., the HFD chief arrived on the scene, assumed command, and established the Incident Command Post (ICP) and staging area at the Yakima Barricade. The Yakima Barricade was closed to traffic, and additional personnel were called in to maintain the ability to respond to secondary alarms on the Hanford Site. By 3:00 p.m., all HFD assets for wildland firefighting had been dispatched, and aerial assets were requested from the Central Washington Interagency Communications Center (CWICC). By this time, the fire was estimated at approximately 500 acres and was rapidly outrunning firefighting crews on the south side of SR 24.

During this period, a HFD grass rig was approximately 2 miles south of SR 24, scouting ahead of pumper/tankers to locate a passable route, when its engine quit. The crewmembers were forced to abandon their vehicle and escape

Incident Command Post

The location at which primary command functions are executed. The ICP may be co-located with the incident base or with other incident facilities.

JUNE 27, 2000

2:30 p.m.
Estimated fire size: 200 acres - Firefighters south of SR 24 outrun by fire due to terrain

2:35 p.m.
HFD fire chief arrives on scene, establishes Incident Command Post (ICP) at Yakima Barricade (note: all HFD resources dispatched)

2:40 p.m.
HFD IC requests air support for fire suppression through Central Washington Interagency Communication Center (CWICC)

through the oncoming fireline and into the burned area. The crewmembers were not injured and walked the 2 miles back to SR 24, where they were picked up by one of the pumper/tankers. The fire totally destroyed the grass rig.

HFD grass rig burned over by fire

At 3:00 p.m., the HFD chief (Incident Commander) requested a Type 3 Incident Management Team (IMT) to respond to the event. He also requested two strike teams of wildland apparatus from the Tri-County Mutual Aid District; those teams began arriving at 5:00 p.m. The Incident Commander asked that additional heavy equipment (caterpillars and road graders) and the Hanford Incident Command vehicle be staged at the Yakima Barricade. At around the same time, the Yakima Training Center, which initially had accepted the HFD request for helicopter support, denied the request.

During the afternoon and evening of June 27, the fire continued to expand rapidly to the north, south, and west. Arriving units were assigned to fight on multiple fronts.

Tri-County Mutual Aid District

Under an agreement last updated in 1998, the following entities are committed to aid each other with fire and related emergency services:

- **the cities of Richland, Kennewick, Pasco, Prosser, and College Place**
- **Benton County Emergency Services**
- **Franklin County Emergency Management**
- **the fire protection districts of Benton County #1 through #6, Franklin County #3, Walla Walla County #4 and #5; and RL, which maintains the Hanford Fire Department.**

JUNE 27, 2000

3:00 p.m.
HFD requests Type 3 IMT
Estimated fire size: 500 acres

4:00 p.m.
Two air tankers begin drops

5:00 p.m.
Mutual Aid District resources from Tri-Cities begin arriving at staging area and are deployed to fire lines

11:36 p.m.
HFD Incident Command transferred to Type 3 IMT

Two air tankers supported by a lead aircraft began retardant drops at 4 p.m. and continued until dark. Because of the fire-related air tanker traffic, the HFD asked for a temporary flight restriction (TFR) over Hanford from the Federal Aviation Agency's Seattle Center. A CWICC helicopter flew HFD personnel to reconnoiter the extent of the fire.

Throughout the evening, resources and equipment were deployed as they arrived.

At approximately 11:36 p.m. on June 27, the HFD relinquished command of the incident to the Type 3 IMT but remained in support at the ICP. This was this last time during the event at which Hanford personnel exercised command authority for the overall fire. From this point on through the remainder of the event, the HFD participated as a responder under the incident command structure (Type 1, 2, and 3).

All HFD equipment remained fully deployed in support of firefighting efforts on the ALE Reserve and adjacent private lands. At this time, the fire was moving through steep, rough terrain on the ALE Reserve.

Air tankers drop fire retardant

JUNE 27, 2000

11:36 p.m.

HFD IC continues to support the ICP
HFD resources continue deployment on ALE Reserve and private impacted lands

Hanford response transitions from an incident command and control role to a responder role within the incident command structure

6:00 a.m.

Type 3 IC requests Type 2 response resources (8 hand crews, 4 Type 1 hand crews, 5 air tankers, 2 Type 2 helicopters

Fire Types*

The National Wildfire Coordinating Group (NWCG) has established fire types to assist in incident management structure for firefighting based on incident complexity. Factors that determine incident complexity include size, location, threat to life and property, political sensitivity, organizational complexity, jurisdictional boundaries, values to be protected, fuel type, and topography.

Type 5 - least complex - Involves relatively few resources and a short duration. A small grass fire involving two to three pumper/tankers and a battalion chief would fit this description.

Type 4 - more complex - Involves perhaps all HFD pumper/tankers and grass rigs available on the Hanford Site.

Type 3 - Involves resources from the local mutual aid area, which may encompass surrounding counties. Type 3 incident management teams are composed of personnel from local fire departments and districts.

Type 2 - Involves resources from outside the local mutual aid area. Typically requires a declaration of a "state mobilization" event, a designation made by the county emergency operations center. In a Type 2 incident, all local resources either are committed to the emergency or are tied up covering secondary alarms. Resources are sent to the incident from across the state, based on availability and travel time.

Type 1 - Typically involves national resources. Type 1 incident managers are qualified to command national fire response resources involving more complicated coordinating issues than Type 2 events.

Fire types are described in the NWCG's national interagency incident management system wildland and prescribed fire qualification.

By the morning of June 28, the fire size was estimated at 23,630 acres. Winds had carried the smoke plume across the main Hanford Site, and Hanford workers began reporting to the Hanford 200 Area first aid station, Hanford Environmental Health Foundation, and Kadlec Medical Center in Richland with smoke-related complaints. In response to this information, the emergency duty officer established an event coordination team (ECT) in the Hanford Emergency Operations Center (EOC). An ECT consists of emergency preparedness personnel responsible for logistics support to personnel at an event scene, protective actions for Site personnel, and dissemination of information to employees and offsite personnel. A qualified Site Emergency Director (SED) leads the ECT. Based on an assessment of the situation, the SED recommended to RL and ORP senior manager on-call personnel that nonessential personnel be released from the 200 West Area. In addition, the determination was made that the situation met the criteria for making Abnormal Event notifications.

JUNE 28, 2000

6:00 a.m.
Estimated fire size: 23,630 acres

7:00 a.m.
Hanford employees report smoke-related compaints

9:43 a.m.
Abnormal Event notification made to offsite organizations (note: not an emergency classification) (JON-2.b)

10:19 a.m.
Industrial hygienists sample air quality in 200 East Area, find results below limits for early release

The ECT managed Hanford-specific aspects of the event and provided support to the overall effort over June 28. In accordance with procedure, the ECT maintained support to the Type 3 IMT through Hanford's Incident Commander, the HFD battalion chief. Through this channel, additional heavy equipment operators were provided during the morning. The ECT also requested that industrial hygienists ensure that conditions in the 200 East areas supported continued occupancy. The hygienists' report indicated that early release of staff was not warranted. The ECT closely monitored the fire's progress during the morning and afternoon of June 28 to determine the appropriate point for declaring an Alert level emergency.

By noon on June 28, the fire size was estimated at 31,190 acres and had breached the last best line of defense on the ALE Reserve at Snively Canyon. Weather conditions had deteriorated; both wind strength and direction were affecting the Hanford Site unfavorably. Because of the threat of the fire crossing SR 240 onto the central Hanford Site, the HFD redeployed its assets to defend Site property and structures.

Fire spreading on ALE Reserve

Abnormal Event

Abnormal Event notifications are intended to notify offsite agencies of site conditions that could potentially escalate into emergencies, or where local residents or the media would expect offsite organizations to be aware of the event. These notifications shall be made as soon as possible (within 30 minutes) following discovery by cognizant facility staff. The notifications are made with an understanding that the information is preliminary and may not include details.

Alert Emergency

An Alert emergency involves a situation in which events are predicted, are in progress, or have occurred that result in either

- **an actual or potential substantial degradation in the level of control of hazardous materials (radiological and nonradiological) - The need to protect personnel from exposure to the hazard(s) resulting from this level of event would be confined to the facility involved and the immediate surrounding area, and not require protection of offsite personnel.**
- **an actual or potential substantial degradation in the level of safety or security of a facility or activity that could, with further degradation, produce a Site Area Emergency or General Emergency.**

JUNE 28, 2000

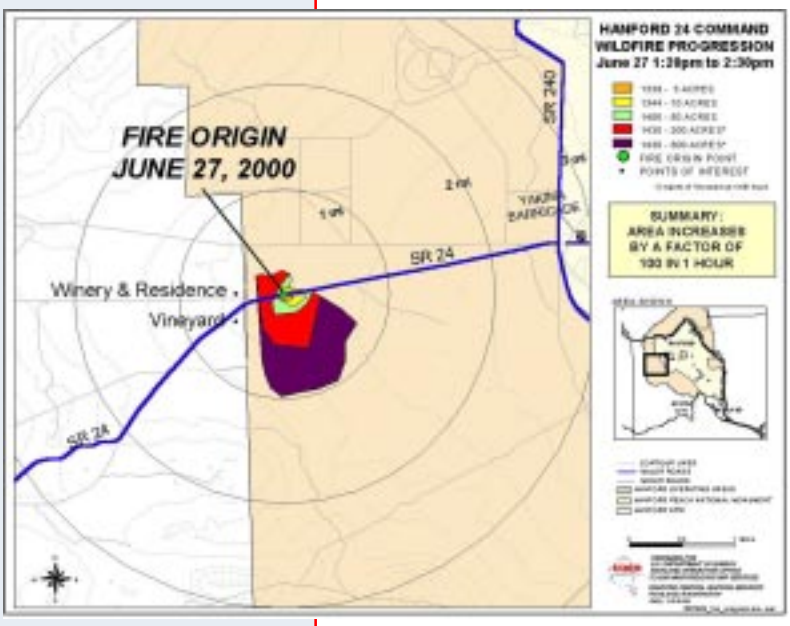
11:00 a.m. RL Manager goes to Incident Command Post for briefing

11:11 a.m. Fireline breached in Snively Canyon

12:00 p.m. Estimated fire size: 31,190 acres

Status: 276 people, 19 engines, 8 STs, 2 bulldozers, 7 handcrews, 1 medical unit- 30% of requested level

State Route 24 had been reopened by the Washington State Patrol following release of the accident scene at 1 a.m. on June 28 but was closed again in the afternoon because of new excursions of the fire across the road. Closure also was intended to facilitate operations of the ICP, which had been moved to the Cold Creek Vineyard on SR 24. The fire was expanding to both the south and west, forcing closure of SR 241 near the junction with SR 24 and SR 240 from SR 225 (Benton City turnoff) to the SR 24 junction.



By 3:47 p.m., the fire had jumped SR 240 and was moving eastward toward the 200 West Area. At the request of the FWS, the Federal Aviation Administration Seattle Center repositioned the TFR over the Hanford Site to provide a safe corridor for aerial fire support.

When the fire entered the central Hanford Site and began to threaten the 222-S operating facilities, an Alert level emergency was declared. The Alert, declared at 4:30 p.m., resulted in full activation of the Hanford EOC. The emergency declaration initiated transmission of notification forms to local emergency service and regulatory agencies, and the Offsite Interface Coordinator began communications with the county and state EOCs via a dedicated phone circuit. Notification forms and associated phone conversations were used throughout the event to communicate and provide status updates. All communications of event actions not directly related to protection of Hanford were coordinated to the Type 1, 2, and 3 IMTs through Hanford's IC.

222-S Laboratories in 200 Area West

JUNE 28, 2000

12:00 p.m. Fire threatens Hanford Central Site

HFD requests reallocation and deployment to respond to tactical needs for central Hanford Site

2:24 p.m. Fire progresses toward Horn Rapids Road

3:00 p.m. Response units pull back to defensible positions

HFD assets redeployed fully to Hanford Site

3:47 p.m. Fire jumps SR 240 toward 200 West Area

Radiological Event Monitoring

Two types of radiological monitoring are performed for Site events. Both types provide airborne sampling at ground level.

- **Real-time monitoring provides detection of airborne activity for levels that would require protective action for workers, and the public.**
- **Low-level monitoring is performed to detect airborne activity over the duration of the event and in the post-event period, to quantify the potential low-level dose to workers and the public. Soil and vegetation samples are also collected during the post-event period.**

The fire's advance onto the central Hanford Site also initiated a series of events associated with radiological control. The Hanford 200 Areas maintain the principal facilities that historically and currently process or store nuclear materials on the site. Included in and near these areas are burial grounds and soil contamination areas. Hanford-based field sampling teams were dispatched to monitor the area for potential airborne release of radioactivity. In consultation with DOE-Headquarters (HQ), RL, and the White House, a request was made for the U.S. Environmental Protection Agency (EPA) to provide radiological monitoring of the event. In addition, RL requested that the Aerial Measuring System (AMS), an airborne radiological monitoring platform maintained by the Nevada Operations Office, be deployed to Hanford.

The fire's continued growth and the level of resources being used to fight it required escalating the Type 3 IMT to a Type 2 IMT. The Type 2 IMT assumed command of the fire at approximately 6:00 p.m. on June 28. The Type 2 Incident Commander requested that a DOE management representative with the authority to make financial and strategic decisions attend the IMT. The RL Manager granted this request, and the designated person reported to the Type 2 IMT.

Fire damage on ALE Reserve

JUNE 28, 2000

3:54 p.m. Hanford Patrol Operations Center requests evacuation of 222-S labs

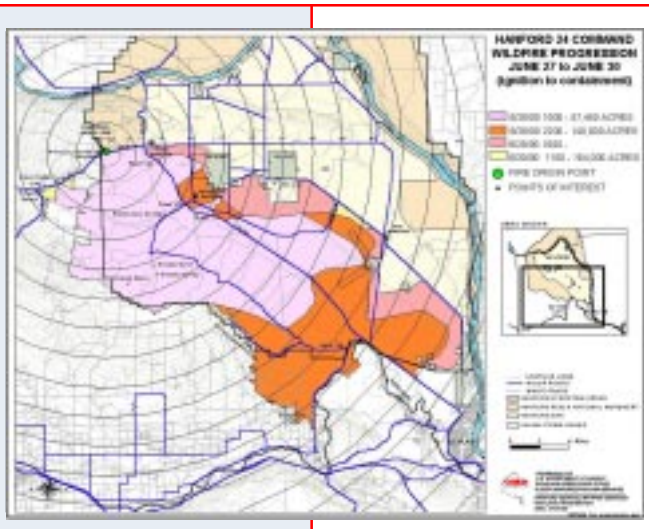
4:28 p.m. RL declares Alert level emergency

4:35 p.m. "Take Cover" alarm activated in 200 Area (based on smoke)

6:00 p.m. Type 2 IMT assumes command of fire

HFD requests offsite assistance

Estimated fire size: 88,640 acres



The Type 2 IMT initially refused a HFD request for outside firefighting resources to protect Hanford structures. The Type 2 Incident Commander expressed concern about the potential for non-Hanford firefighter exposure to radioactivity or chemical hazards, a concern that was raised by external sources. After a protracted time during which Hanford's established plan for managing and protecting non-Hanford firefighters was discussed and accepted, the Type 2 IMT provided the additional resources.

Benton County declared a state of emergency at 6:00 p.m. By this time, the fire had progressed to the southern end of the Hanford Site.

Road grader stuck in sand

A road grader became stuck in soft sand while grading a firebreak west of the Rattlesnake Barricade. Because of rapidly approaching fire, the operator abandoned the grader and moved to safety with no injuries. Fire damage to the road grader was limited to the front section.

By 6:00 p.m. on June 28, the fire had consumed an estimated 88,640 acres, an increase in size of 57,450 acres over the preceding 6 hours. Average consumption was 9,600 acres/hour during that period.

On the Hanford Site, the spreading fire threatened the Laser Interferometer Gravitational-Wave Observatory (LIGO), a non-DOE facility. The Hanford EOC notified the LIGO to evacuate. The LIGO manager was delayed at a roadblock while returning to the Site to secure the facility. When he arrived, he found a Boy Scout troop touring the facility. The troop was evacuated immediately, and the remaining LIGO personnel secured the facility and departed.

While checking Gate 106 (southern access to the ALE Reserve), a Hanford Patrol officer was caught in front of the rapidly advancing fire and was forced to escape by driving rapidly west toward Benton City. This occurred when the

JUNE 28, 2000

6:00 p.m. Assessment determines that fire progressed at rate of 9,600 acres/hour over immediately preceding 6 hours

Benton County declares state of emergency

7:14 p.m. LIGO evacuated (including facility personnel and visiting Boy Scout Troop) (JON-2.k)

8:00 p.m. Fire progresses over ridge at Gate 106 Rattlesnake Mountain

Fire jumps SR 225 near Wanawish Dam at Horn Rapids

LIGO facility threatened by fire

fire jumped SR 225 near Wanawish Dam near Horn raids on the Yakima River at approximately 8:00 p.m. Soon after, the fire crossed the Yakima River and briefly threatened lands just north of the city of West Richland. By this time, the fire also neared a residential neighborhood of Richland, approached the Hazardous Materials Management and Emergency Response (HAMMER) training center and Hanford Patrol facilities on the Site, and began to threaten industrial facilities on Hanford's southern boundary. At approximately 9:00 p.m., the fire entered the Benton City area.

During the evening, Hanford Patrol requested the Richland Police Department to assist at roadblocks at SR 240 and Stevens Drive, help with crowd control of public onlookers near HAMMER, and remove onlookers on Kingsgate and Horn Rapids Road. All nonessential personnel remaining north of the Wye Barricade were asked to evacuate the Hanford Site.

Fire crosses Yakima River

JUNE 28, 2000

8:36 p.m. Fire crosses Yakima River

Hanford Patrol needs to handle HAMMER crowd

9:00 p.m. Fire enters Benton City

Estimated fire size: 140,800 acres

JUNE 29, 2000

1:45 a.m. Governor of Washington State declares state of emergency

12:30 p.m. Air tanker drops fire retardant on BC Controlled Area

Rough terrain of Rattlesnake Mountain

Workers living west of the site were instructed to use SR 24; however, SR 24 was closed at the time, as was SR 240. Later in the evening, the SED ordered the evacuation of the 300 Area.

By 10:00 p.m., the estimated size of the fire was 140,800 acres. Press conferences were held at the Richland Federal Building, with all local agencies represented in a Joint Information Center (JIC). In addition, a Multi Agency Coordination (MAC) team was assembled to assist the Type 2 Incident Commander in financial matters and strategic decisions. Although DOE is not a general member of the MAC team, the RL Manager assigned a representative of the HFD to coordinate with this group.

On June 29 at 1:45 a.m., the Governor of Washington State declared a state of emergency. The fire had been stopped successfully around the 200 West facilities but was continuing to move east and south across the central Hanford Site.

Throughout the day on June 29, fire crews continued to battle the blaze. Defensive lines were cut along major thoroughfares on the site, and crews kept the fire from reaching the 400 and 300 Area facilities. Aerial support was used to combat the fire that burned a portion of the 200 Area BC Controlled Area. Weather conditions improved; wind speeds were reduced significantly. The RL JIC issued several press releases during the day indicating that no environmental release of contamination occurred. The Site recovery team began to plan to reopen the site.

The BC Controlled Area is a soil contamination area containing low-level radioactivity, predominantly cesium-137. The radioactivity on the surface is a result of previous animal intrusion into an old subterranean waste storage location.

Defensive lines stop fire just short of FFTF

JUNE 30, 2000

3:06 p.m. Radiological samples collected

139 samples (52 air, 23 large area smears, 2 soil samples, 12 vegetation)

4:57 p.m. Hanford EOC terminates Alert emergency

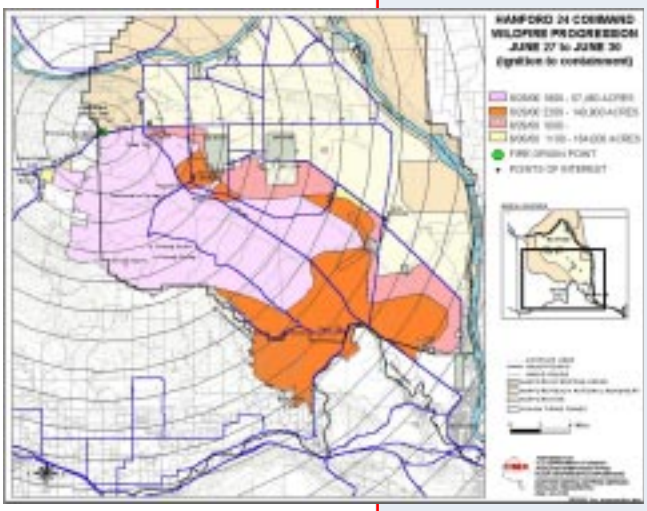
5:00 p.m. EPA starts high-volume (24-hour) sampling (see JON-3)

July 1, 2000

4:00 p.m. Fire officially contained and declared out

2.4 Recovery and Closure

On June 30, the recovery team was established, and a radiological survey team was dispatched to assess unused laboratory facilities on the southeast flank of the ALE Reserve that had been overrun by the fire. The main facilities, which have maintained fire barriers, were found intact, although the fire had destroyed a nearby semi-trailer and metal storage shed that were not so protected. Neither structure housed any radioactive or hazardous materials.



Fire damage to structures on ALE Reserve

The EOC alert activation was terminated at 4:57 p.m. on June 30. On July 1 at 4:00 p.m., the fire was officially declared to be contained and out. Firefighters had patrolled the site, putting out remaining hotspots and looking for flare-ups during the day.

On July 11, a press release indicated that the EPA had detected low levels of airborne radioactivity.

A summarized chronology of the 24 Command Wildland Fire event is presented in Appendix B.

Fire on the rough terrain